



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,910	02/26/2002	Hardy Wietzoreck	DNAG 224 - PFF/JRC	3826
7590 09/19/2005			EXAMINER	
Fulbright & Jaworski 666 Fifth Avenue New York, NY 10103			ZHENG, LOIS L	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 09/19/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/980,910

Applicant(s)

WIETZORECK ET AL.

Examiner

Lois Zheng

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 51-83 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 51-83 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Status of Claims*

1. Claims 1-50 are canceled in view of the amendment filed on 6 July 2005. New claims 51-83 are added. Therefore, claims 51-83 are currently under examination.

Note, in claims 80-81, "managanese" should be changed to "manganese".

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 51, 53, 55-65, 67-76 and 81-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel et al. US 5,976,272(Seidel) in view of Reed US 3,939,014(Reed).

Seidel discloses a no-rinse phosphating metal substrate process with a coating solution comprising:

- 2 – 25 g/l of zinc ions (abstract, col. 2, lines 47-54, lines 58-59)

Art Unit: 1742

- 2 – 25 g/l of manganese ions (abstract, col. 2, lines 62-66)
- 50 – 300 g/l of phosphate ions (abstract, col. 2, lines 47-54)

With respect to claim 51 of the instant invention, Seidel further teaches that the coating formed is a crystalline phosphate coating(claim 13).

However, Seidel fails to teach the claimed amount of zinc ions being 26 – 60 g/l.

Reed teaches an aqueous zinc phosphating solution for coating of steel for deforming(title, abstract). The zinc phosphating solution of Reed comprises 5-100g/l of zinc and 10-150g/l of phosphate(col. 4, lines 18-21).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated 5-100g/l of zinc of Reed into the coating solution of Seidel in order to achieve the rapid coating results as taught by Reed(col. 4, lines 13-17).

Furthermore, the amounts of zinc, manganese ions in the coating solution of Seidel in view of Reed overlap the claimed amounts of zinc and manganese ions(i.e. 26 – 60 g/l of zinc ion and 0.5 – 40 g/l of manganese ion) as recited in claim 1 of the instant invention. The amount of phosphate ions in the coating solution of Seidel in view of Reed encompasses the claimed phosphate amount of 50 – 300 g/l as recited in claim 1. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed Zn, Mn, and Phosphate ion ranges from the disclosed Zn, Mn, and Phosphate ion ranges of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed Zn, Mn, and Phosphate ion ranges.

With respect to claim 53 of the instant invention, Seidel's phosphating solution further comprises 0.1 – 15 g/l of nickel (col. 3, lines 3-7), which overlaps the claimed nickel amount of up to 20 g/L as recited in claim 53. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed up to 20 g/l nickel ion range from the disclosed nickel ion range of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed nickel ion range.

With respect to claim 55 of the instant invention, Seidel further discloses that the ratio of the sum of metal ions to phosphate is in the range of 1:5 – 1:6 (col. 4, lines 23-26, lines 37-42, lines 50-55), which overlaps the claimed cation to phosphate ion ratio range of 1:1 – 1:8 as recited in claim 55. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed 1:1 – 1:8 cation to phosphate ion ratio range from the disclosed ratio range of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed cation to phosphate ion range.

With respect to claim 56 of the instant invention, Seidel further discloses that the liquid film formed by Seidel's phosphating solution is in the amount of 2 – 10 ml/m<sup>2</sup> (col. 3, lines 52-53), which overlaps the claimed amount range of 1 – 12 ml/m<sup>2</sup> as recited in claim 56. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed phosphate coating amount of 2 – 10 ml/m<sup>2</sup> from the disclosed phosphate coating amount range of Seidel in view of Reed would have been obvious to

Art Unit: 1742

one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed phosphate coating amount range.

With respect to claims 57 and 75 of the instant invention, Seidel further teaches the phosphate coating weight of around 0.3 to around 3 g/m<sup>2</sup>(col. 3 lines 59-60), which reads on the claimed layer weight of 0.1 to 5g/m<sup>2</sup> as recited in instant claim 57 and the claimed layer weight of 0.2 to 5g/m<sup>2</sup> as recited in instant claim 75.

With respect to claim 58 of the instant invention, Seidel further teaches that the phosphate coating can be applied by various methods such as spraying and squeezing (col. 3 line 64 – col. 4 line 17).

With respect to claim 59 of the instant invention, Seidel further teaches that the substrate surface is heated to 50 – 120°C (col. 5 lines 18-20), which reads on the claimed temperature of 20-120°C.

With respect to claim 60 of the instant invention, since Seidel in view of Reed disclose a phosphate coating composition in g/l that overlaps the coating composition of claimed invention, therefore, the coating composition in wt% as taught by Seidel in view of Reed would have inherently overlapped the claimed coating composition in wt%. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating composition ranges in wt% from the disclosed ranges of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed coating composition ranges.

With respect to claim 61 of the instant invention, even though Seidel in view of Reed do not explicitly teach the claimed second application of the phosphate coating

Art Unit: 1742

layer, one of ordinary skill in the art would have found the claimed second phosphate coating layer obvious since it is well known in the art to apply additional phosphate coating layers in order to enhance the corrosion resistance. Furthermore, Seidel's phosphate coating solution, comprising 2-25 g/l of Zn, 2-25 g/l of Mn, 0.1-15g/l of Ni, and 50-300g/l of phosphate ions(i.e. equivalent to 30.77-184.66 g/l of  $P_2O_5$ ), overlaps the concentrations of the claimed second coating solution. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating composition ranges from the disclosed ranges of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed coating composition ranges.

With respect to claim 62 of the instant invention, Seidel further teaches that prior to the phosphate coating step the substrate can be treated with an aqueous solution of titanium phosphates for activation(col. 5 line 63 – col. 6 line 4).

With respect to claim 63 of the instant invention, Seidel further discloses the use of 3-200 mg/l of copper ions in the phosphate coating solution, which overlaps the claimed at least 0.3 mg/l of copper ions in the first phosphating solution and 0.1 to 50mg/l of copper ions in the second phosphating solution. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating copper ion concentration range from the disclosed copper ion concentration range of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed copper ion concentration range.

With respect to claim 64 of the instant invention, Seidel further teaches that the ratio of free acid to total acid is in the range of 1:4 – 1:20(i.e 0.05-0.25), which reads on the claimed range of 0.03-0.6.

With respect to claim 65 of the instant invention, Seidel further teaches the use of hydrogen peroxide, nitrobenzene sulfonic acid or hydroxylamine as accelerator(col. 4 line 64 – col. 5 line15), which read on the claimed catalyst.

With respect to claim 67 of the instant invention, Seidel further teaches the use of hydroxycarboxylic acid such as lactic acid, citric acid and tartaric acid(col. 3 lines 17-21) in the phosphate coating solution as claimed.

With respect to claim 68 of the instant invention, Seidel further teaches the addition of fluoro complexes of boron, silicon, titanium or zirconium(col. 3 lines 9-12) in the phosphate coating solution, which reads on the instantly claimed boron, silicon, titanium, zirconium and fluoride ions.

With respect to claim 69 of the instant invention, Seidel further teaches that the temperature of the coating solution is in the range of 15 to 80°C(col. 3 lines 42-43), which substantially overlaps the claimed temperature range of 10-80°C. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating temperature range from the disclosed temperature range of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed coating solution temperature range.

With respect to claim 70 of the instant invention, even though Seidel in view of Reed do not explicitly teach that the passivating coating solution is applied to a



Art Unit: 1742

phosphate layer as claimed, one of ordinary skill in the art would have found the claimed passivating coating solution applied to a phosphate coating layer obvious since it is well known in the art that multiple phosphate layers(i.e. passivating layers) can be applied to further enhance the corrosion resistance. In addition, Seidel teaches applying the phosphate coating solution by spraying or rolling(col. 3 line 64 – col. 4 lines 17).

With respect to claims 71 and 72 of the instant invention, Seidel further teaches the phosphate coating impregnated with oil, which acts as lubricant to reduce the friction between the cold forming mechanical tool and the workpiece(col. 2 lines 23-26). Furthermore, the examiner does not find claim 72 bearing patentable weight since the oil coating or lubricant coating is not required to be present.

With respect to claim 73 of the instant invention, Seidel further teaches that the phosphate coating is used to prepare the substrate for painting(col. 2 lines 17-18), which meets the instant claim limitations.

With respect to claim 74 of the instant invention, Seidel further teaches that phosphate coating is applied to metal parts prior to subjecting the metal parts to cold mechanical forming(col. 2 lines 20-24).

With respect to claim 76 of the instant invention, Seidel further teaches the addition of free or complex form fluoride in the amount of 0.01 – 5 g/l(col. 3 lines 9-14).

With respect to claim 77 of the instant invention, as stated in the rejection of instant claim 51, coating composition of Seidel in view of Reed comprises amounts of zinc, manganese, phosphate ions that overlap the claimed mounts as recited in instant

Art Unit: 1742

claim 77. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05.

The selection of claimed Zn, Mn, and Phosphate ion ranges from the disclosed Zn, Mn, and Phosphate ion ranges of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utilities in their disclosed Zn, Mn, and Phosphate ion ranges. In addition, as stated in the rejection of instant claims 55 and 57, Seidel further discloses that the ratio of the sum of metal ions to phosphate is in the range of 1:5 – 1:6(col. 4, lines 23-26, lines 37-42, lines 50-55) and Seidel further teaches the phosphate coating weight of around 0.3 to around 3 g/m<sup>2</sup>(col. 3 lines 59-60). Therefore, the coating weight and cation to phosphate ion ratio as taught by Seidel in view of Reed read on the claimed coating weight and cation to phosphate ion ratio..

Regarding instant claim 81, the 2 – 25 g/l of manganese ions in the coating composition of Seidel in view of Reed overlaps the claimed manganese concentration of 5-40g/l. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed manganese ion range from the disclosed manganese range of Seidel in view of Reed would have been obvious to one skilled in the art since Seidel in view of Reed teach the same utility in their disclosed manganese concentration range.

Regarding instant claim 82, the instant claim is partially rejected for the same reason as stated in the rejection of instant claim 78 above. In addition, as stated in the rejection of instant claim 70 above, even though Seidel in view of Reed do not explicitly teach the claimed contacting the resultant coated metallic surface with a second phosphating solution, one of ordinary skill in the art would have found the claimed

Art Unit: 1742

passivating coating solution applied to a phosphate coating layer obvious since it is well known in the conversion coating art that multiple phosphate coating layers can be applied to further enhance the corrosion resistance.

5. Claims 51, 53-61, 63, 65, 68-75, 77 and 81-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuyler et al. US 6,743,302(Cuyler).

Cuyler teaches a dry-in-place zinc phosphating composition for coating a metal substrate(title, abstract). The zinc phosphating composition of Cuyler comprises:

- 53 – 400 g/l of phosphate ions (col. 4, lines 27-61, claims 1(a) and 2(a))
- zinc to phosphate ion ratio of 0.003:1.00 – 0.10:1.00 (col. 5, lines 16-31), which is equivalent to 0.159 – 40 g/l of zinc ions
- manganese to phosphate ion ratio of 0.01:1.00 – 0.7:1.00 (col. 5, lines 32-54), which is equivalent to 0.53 – 280 g/l of manganese ions

With respect to claim 51 of the instant invention, the amounts of zinc, manganese and phosphate ions in the coating solution of Cuyler overlap the claimed amounts of zinc, manganese and phosphate ions(i.e. 26 – 60 g/l of zinc ion, 0.5 – 40 g/l of manganese ion and 50 – 300 g/l of phosphate ions as recited in claim 1). Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed Zn, Mn, and Phosphate ion ranges from the disclosed Zn, Mn, and Phosphate ion ranges of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utilities in its' disclosed Zn, Mn, and Phosphate ion ranges. In addition, Cuyler teaches that microcrystalline coating can be formed when the conversion coating is rinsed off before drying(col. 1 lines 35-43). Therefore, even though Cuyler's

Art Unit: 1742

phosphating method does not require rinsing of coated surface, it would have been obvious to one of ordinary skill in the art to have added the rinsing step if crystalline coating layer is desired.

With respect to claim 53 of the instant invention, Cuyler teaches that the coating solution further comprises nickel and the nickel to phosphate ion ratio is in the range of 0.003:1.00 – 0.05:1.00 (col. 5, line 55 – col. 6, line 11), which is equivalent to 0.159 – 20g/l. The amount of nickel in the coating solution of Cuyler overlaps the claimed nickel amount of up to 20 g/L as recited in claim 53. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed up to 20 g/l nickel ion range from the disclosed nickel ion range of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utilities in its' disclosed nickel ion range.

With respect to claim 54 of the instant invention, Cuyler further teaches the addition of polymer to the coating solution (abstract, col. 7 line 34 – col. 10 line 27).

The phrase “in particular of N-containing heterocyclic compounds, preferably of vinyl pyrrolidones” bears no patentable weight since it is merely an example of a polymer.

With respect to claim 55 of the instant invention, the ratio of the sum of cations to phosphate ions in the solution of Cuyler overlaps the claimed range of 1:1 – 1:8. This conclusion is arrived by comparing the total amount of Zn, Mn and Ni ions to phosphate ions for the coating solution of Cuyler. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed 1.1 – 1.8 cation to phosphate ion ratio range from the disclosed ratio range of Cuyler would have been obvious to one

Art Unit: 1742

skilled in the art since Cuyler teaches the same utilities in its' disclosed cation to phosphate ion ratio range.

With respect to claim 56 of the instant invention, the examiner asserts that the amount range of the coating solution of Cuyler would overlap the claimed 1-12 ml/m<sup>2</sup> since the coating solution of Cuyler is substantially similar to the coating solution of the claimed invention. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed phosphate coating amount of 2 – 10 ml/m<sup>2</sup> from the disclosed phosphate coating amount range of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utilities in its' disclosed phosphate coating amount range.

With respect to claims 57 and 75 of the instant invention, Cuyler further teaches the phosphate coating weight of 0.05 - 8 g/m<sup>2</sup>(col. 11 lines 20-37), which overlaps the claimed layer weight of 0.1 to 5g/m<sup>2</sup> as recited in instant claim 57 and the claimed layer weight of 0.2 to 5g/m<sup>2</sup> as recited in instant claim 75. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating weight range from the disclosed range of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utilities in its' disclosed coating weight range.

With respect to claim 58 of the instant invention, Cuyler further teaches that various coating methods such as spraying can be used to apply the phosphate coating solution.

With respect to claim 59 of the instant invention, Cuyler further teaches that the phosphate coating can be dried at 20-230°C, which overlaps the claimed temperature of

Art Unit: 1742

20-120°C as instantly claimed. Therefore, a prima facie case of obviousness exists.

See MPEP 2144.05. The selection of claimed drying temperature range from the disclosed range of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utilities in its' disclosed temperature range.

With respect to claim 60 of the instant invention, since Cuyler teaches a phosphate coating composition in g/l that overlaps the coating composition of claimed invention, therefore, the coating composition in wt% as taught by Cuyler would have inherently overlapped the claimed coating composition in wt%. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating composition ranges in wt% from the disclosed ranges of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utilities in its' disclosed coating composition ranges.

With respect to claim 61 of the instant invention, Cuyler further teaches that the phosphate conversion coating can be applied again the substrate is being mechanically shaped(col. 11 lines 31-37). Furthermore, Cuyler's phosphate coating solution, comprising 0.159 – 40 g/l of Zn, 0.53 – 280 g/l of Mn, 0.159 – 20g/l of Ni, and 53 – 400 g/l of phosphate ions(i.e. equivalent to 32.62 - 246.21g/l of  $P_2O_5$ ), overlaps the claimed concentrations of the claimed second coating composition. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating composition ranges from the disclosed ranges of Cuyler would have been obvious to one skilled in the art since Cuyler teach the same utilities in its' disclosed coating composition ranges.

With respect to claim 63 of the instant invention, Cuyler further teaches the use of copper in the coating solution in the amount of 3-100mg/l(col. 6 line 66 – col. 7 line 2), which overlaps the claimed at least 0.3 mg/l of copper ions in the first phosphating solution and 0.1 to 50mg/l of copper ions in the second phosphating solution.

Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating copper ion concentration range from the disclosed copper ion concentration range of Cuyler would have been obvious to one skilled in the art since Cuyler teach the same utilities in its' disclosed copper ion concentration range.

With respect to claim 65 of the instant invention, Cuyler further teaches using hydroxylamine in the coating composition(col. 6 line 37-59).

With respect to claim 68 of the instant invention, Cuyler further teaches using iron in the coating composition(col. 6 line 14-36).

With respect to claim 69 of the instant invention, Cuyler further teaches that the coating solution is applied at 20-30°C(col. 10 line 57-61), which reads on the instantly claimed 10-80°C.

With respect to claim 70 of the instant invention, Cuyler further teaches that the additional protective phosphate coating can be applied(col. 1 lines 46-52) by various coating methods such as spraying(col. 10 lines 37-53).

With respect to claims 71-72 of the instant invention, Cuyler further teaches that the phosphate coating layer can be used as a carrier for lubricant material, which inherently meets the claim limitation of applying a lubricant to dried phosphate coating

Art Unit: 1742

layer. Furthermore, the examiner does not find claim 72 bearing patentable weight since the oil coating or lubricant coating is not required to be present.

With respect to claim 73 of the instant invention, Cuyler further teaches that phosphate coating enhances the adhesion to subsequently applied paint, which inherently meets the instant claim limitations.

With respect to claim 74 of the instant invention, Cuyler further teaches the substrate is shaped mechanically after coated with a phosphate coating(col. 11 lines 31-38).

With respect to claim 77 of the instant invention, the instant claim is rejected for the same reasons as stated in the rejection of instant claims 51, 55 and 57 above.

With respect to claim 81 of the instant invention, the 0.53 – 280 g/l of manganese ions in the coating composition of Cuyler overlaps the claimed manganese concentration of 5-40g/l. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed manganese ion range from the disclosed manganese range of Cuyler would have been obvious to one skilled in the art since Cuyler teaches the same utility in its disclosed manganese concentration range.

With respect to claim 82 of the instant invention, the instant claim is rejected for the same reasons as stated in the rejection of instant claims 51, 57 and 70 above.

6. Claims 52, 66, 78-80 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuyler in view of Fotinos et al. US 5,653,790(Fotinos).

The teachings of Cuyler are discussed in paragraph 5 above. Cuyler also teaches the addition of polymer to the zinc phosphate coating solution in the polymer to



Art Unit: 1742

phosphate ion ratio amount of 0.0005:1.00 – 5:1.00 (col. 9, lines 37-54), which is equivalent to 0.0265 – 2000 g/l. Cuyler further teaches adding 0.005 – 0.15 g/l of hydrogen peroxide into the coating solution (col. 7, lines 30-31)

However, Cuyler fails to teach the claimed peroxide amount of 0.5 – 120 g/l.

Fotinos discloses a zinc phosphate aqueous coating composition that utilizes 0.005 – 5 g/l of hydrogen peroxide as an accelerator (col. 3 lines 36-42).

With respect to claims 52 and 66 of the instant invention, it would have been obvious to one of ordinary skill in the art to have added 0.005 – 5 g/l of hydrogen peroxide as taught by Fotinos into the zinc phosphate coating solution of Cuyler in order to accelerate the coating processing as taught by Fotinos (col. 3 lines 36-42).

Furthermore, the amount of hydrogen peroxide (i.e. 0.005 – 5 g/l) as taught by Cuyler in view of Fotinos overlaps the claimed hydrogen peroxide amount of 0.5 – 120 g/l as recited in instant claim 52 of the instant invention. In addition, the amount of polymer in the coating solution of Cuyler encompasses claimed 0.5 – 50 g/l of polymer as recited in claim 52. . Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed hydrogen peroxide and polymer amount ranges from the disclosed ranges of Cuyler in view of Fotinos would have been obvious to one skilled in the art since Cuyler in view of Fotinos teach the same utilities in their disclosed hydrogen peroxide and polymer ranges.

With respect to claim 78 of the instant invention, the instant claim is rejected for the same reasons as stated in the rejections of instant claims 52, 55 and 57 above.

With respect to claim 79 of the instant invention, the instant claim is rejected for the same reason as stated in the rejection of instant claim 57 above.

With respect to claim 80 of the instant invention, the instant claim is rejected for the same reason as stated in the rejection of instant claim 81 above.

With respect to claim 83 of the instant invention, the instant claim is rejected for the same reasons as stated in the rejection of instant claims 78 and 82 above.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1742

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

  
**ROY KING**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**